

calculation unit 57, outputting result values  $t21 = So$ ,  $t22 = So \times 1/4$ ,  $t23 = So \times 1/8$ ,  $t24 = So \times 1/32$ , respectively (step S99).

Accordingly, although an input signal to the input buffer unit 33 is amplified through the butterfly operation unit 37, the resulting signal falls within the predetermined limit of the input signal to the input buffer unit 33 since the resulting signal is set according to the scale count  $Sc$  and the scale factor  $Sf$  for the butterfly operation.

According to the FFT apparatus of the present invention for compensating an OFDM output bit signal, the extent of the amplification of the received OFDM bit signal can be calculated by utilizing both the scale factor  $Sf$ , calculated by the butterfly operation and the scale count  $Sc$ , generated by the cumulative counting of the count figure corresponding to the scale factor.

Also, as the extent of increase and decrease of the received bit signal can be measured by controlling the scale value, it is also possible to control the restored value from the received bit signal so that it falls within the predetermined range of the input bit signal.

Since the butterfly operated scale factor  $Sf$  is measured at each stage, the flexible scale factor values and scale count values can be calculated at each stage, thus a bit signal for the received bit signal can be calculated more accurately.

In the drawings and specification, there has been disclosed a typical preferred embodiment of the invention and, although specific terms are

employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the following claims.